

Title: Seismic Vulnerability Assessment of Southwestern Indiana using HAZUS

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Hazard examined: Earthquakes

Study emphasis: Disaster preparedness and response.

Summary: Offers a HAZUS based loss estimation study of Southwestern Indiana. HAZUS is intended to provide local, state and regional emergency management officials with the necessary tools to plan and stimulate efforts to reduce risk from earthquakes as well as prepare for emergency response and recovery efforts following an event.

Vulnerability Indicators: Loss estimates

Economic Development, Disaster Preparedness, Disaster Response and/or Disaster Reconstruction Application: Disaster preparedness and disaster response

Data Requirements: Building inventory, emergency facilities, Transportation facilities, high potential loss facilities, direct damage data, direct economic and social loss etc.

Output: The HAZUS project is designed to produce loss estimates for use by local authorities in planning for earthquake loss mitigation, emergency preparedness and response and recovery. The methodology deals with nearly all aspects of built environment, and with a wide range of different types of losses. The methodology has been tested against the experience from several past earthquakes and against the judgment of experts. Subject to several limitations, HAZUS has been judged capable of producing results that are credible for the intended purposes. Uncertainties are inherent in any such loss estimation methodology. They arise in part from incomplete scientific knowledge concerning earthquakes and their effect upon buildings and facilities, and in part from the approximations and simplifications necessary for comprehensive analyses. The possible range of uncertainty is best evaluated by conducting multiple analyses, varying certain of the input parameters to which losses are most sensitive.

Results of Application at Case Study Site: HAZUS should be regarded as a work in progress. Initial studies were undertaken based on default data. Results from these

studies provided momentum to continue data collection and improve the current data. Additional calibration studies are also continuing, and improvements and additions are underway.

Lessons Learned: Active participation from local government, academia, private industries and public agencies is essential for the success.